can be resold, and the resale possibility means that changes in the supply or demand for housing not envisioned at the time of initial purchase can bring significant capital gains to the owner. Such capital gains, represented by increases in the price of housing, are increases in wealth. If such an increase in wealth is made liquid by refinancing or by the lowering of other forms of saving, higher levels of current consumption are possible. Therefore, higher house prices, for the more than 90 percent of homeowners who do not buy a house in a given year, are more like a fall in the cost of living than an increase--as suggested by the CPI.

Another difficulty in the current treatment of homeownership is the very large weight given to mortgage interest costs. These are weighted both by the purchase price of the house and by the total undiscounted mortgage interest payments over the expected life of the mortgage. For example, the current relative importance of mortgage interest costs in the CPI is about 9.8 percent. If the mortgage rate were to change from 10 percent to 11 percent in a given month, this alone would cause the overall CPI to rise by almost 1.0 percent, or at an annual rate of more than 12 percent.

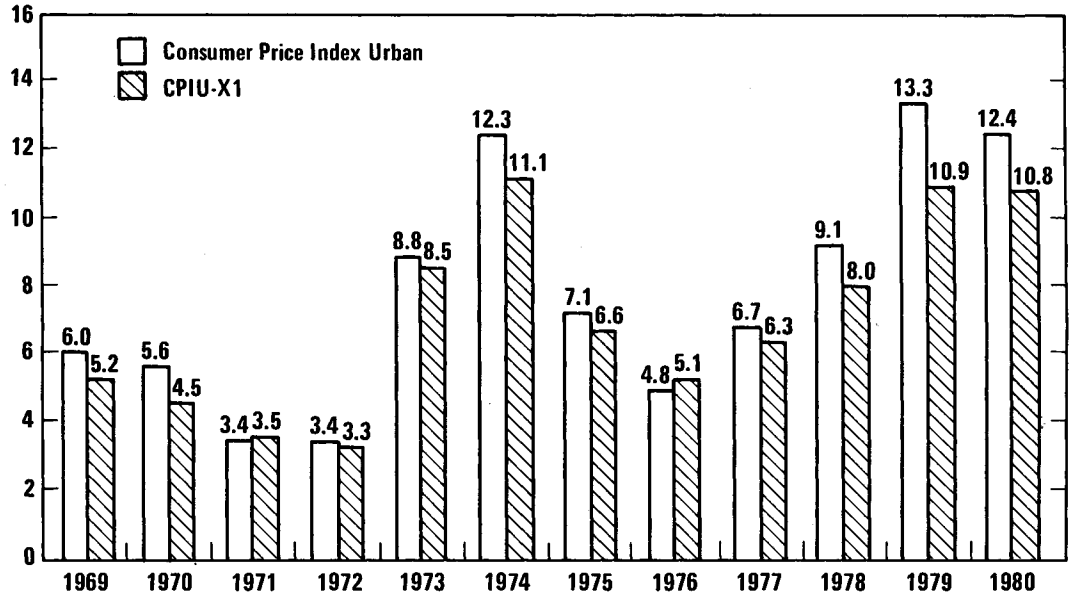
Another approach to the measurement of homeownership costs is to think of a house, because of its durable nature, as having two functions, one as a source of shelter services and the other as an investment that provides a return and can be resold for a possible capital gain. The price of the house represents both of these functions. While we wish to record the cost of the first function in our cost-of-living index, we do not wish to include investment goods--any more than we would wish to include the Dow Jones average or changes in bond prices. One way to separate the two functions is to treat the owner of a house as an investor who has bought it for income purposes--both current income and capital gains--and then rented it out to himself. This is the approach taken in the national income accounts. The value of a house to a renter is only that of the shelter services it provides. A measure of the value of shelter services can be obtained by measuring market rental rates. House price changes in excess of rental rate changes can be assumed to represent changes in the investment value of the house.

Such a rental equivalence concept is now being employed by the Bureau of Labor Statistics as a proxy in one of a series of experimental homeownership concepts. The effect of substituting this measure--called CPI X-1--results in the large reductions in the CPI changes mentioned above and shown in Figure 5. There is not, however, a complete consensus on which of the experimental

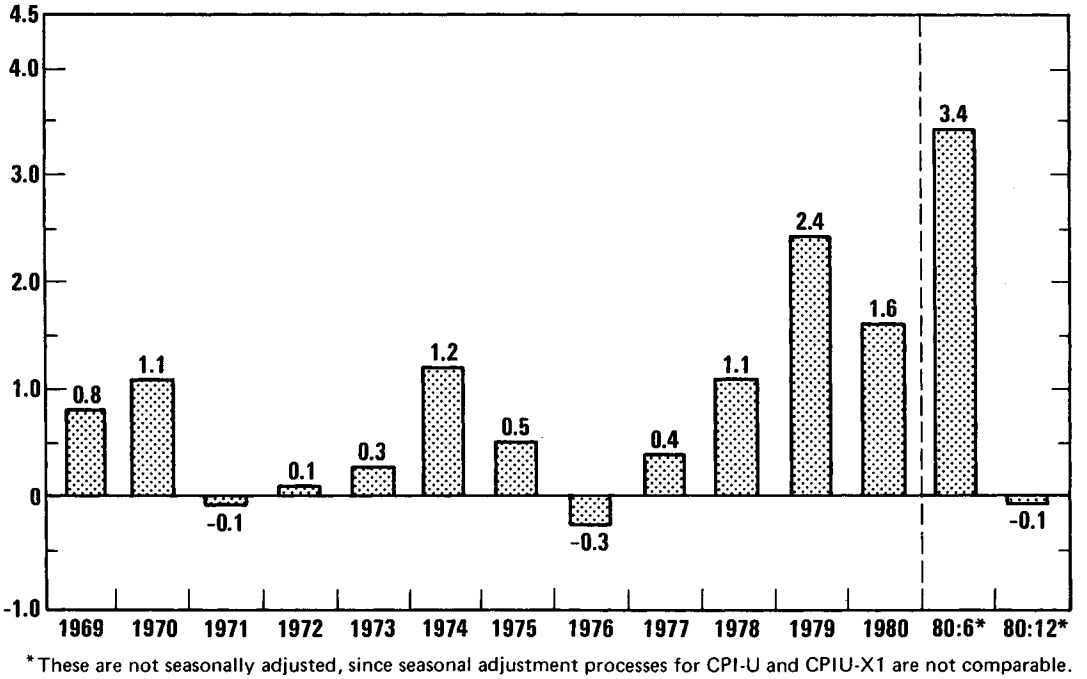
Figure 5.

Comparison of Alternative Consumer Price Indexes

Percent Change December to December



Difference in Percentage Points



*These are not seasonally adjusted, since seasonal adjustment processes for CPI-U and CPIU-X1 are not comparable.

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BLS alternatives is the most suitable, and further work may have to be undertaken before an acceptable solution is found. 3/

The Problem of the Fixed Market Basket

A Laspeyres index holds the base-period quantity weights constant over the run of the index. This permits the index to reflect only pure price changes. Over time, however, an increasingly out-of-date consumption pattern is used for measuring today's cost of living. The index continues to answer the question, "What is the cost of the base-period consumption basket at today's prices?" but does not tell how much the cost of current consumption patterns has changed since the last or more recent period. The consequences of using an out-of-date market basket are that the index tends to overstate actual period-to-period changes in the cost of living. This is because people generally reduce their consumption of items whose prices increase, and substitute consumption of items whose prices have decreased or at least increased at a less rapid rate. Thus the share of gasoline in total personal consumption fell from 3.5 percent in 1972 to 2.8 percent in 1980, or by a fifth. In the CPI, however, gasoline continues to have the same weight as it had in the days prior to the rapid increase in world oil prices. Given the rapid changes in gasoline prices over the past seven years, this overweighting has driven the overall CPI up faster than actual living costs.

3/ The current CPI rent data are collected from a renter-occupied housing sample. Some objections have been raised to the use of this as a proxy for homeownership costs. The criticisms are based on the difference in characteristics between rental housing and owner-occupied housing such as size, neighborhood, and physical condition. While these factors are assumed to account for a difference in the level of rent between the two types of housing, it is not known whether their rates of change differ from each other. This problem could be reduced by redesigning and reweighting the sample of rental units.

Fuller information on the problem of measuring the cost of owner-occupied housing can be obtained from the lengthy series of technical working papers by Robert Gillingham and others of the Bureau of Labor Statistics, and from the General Accounting Office report Measurement of Homeownership Costs in the Consumer Price Index Should Be Changed, PAD-81-12 (April 1981).

The magnitude of this substitution bias in the CPI is somewhat cumbersome to estimate. 4/ One recent attempt concluded that for the 15 years ending in 1973 the bias was about 3 percent of the total rise in prices. 5/ One would expect, however, that the bias would be larger, the greater is the change in relative prices and the greater is the responsiveness or elasticity of purchases to changes in prices. The most dramatic relative price changes have occurred since 1973. Also, one would expect substitution to be greater in the long run, as adaptation takes place, than in the short run. This suggests that the substitution bias in the CPI may have become substantially larger in the different price environment of the years since 1973.

One approach to this problem is to update the market basket at more frequent intervals. This is what is done with the chain index, and BLS will have the opportunity to update more frequently in the future with data from the continuing expenditure survey now under way.

Aggregation of Family Budgets

The BLS bases its market basket on data from surveys of consumer buying habits. It aggregates the expenditure data over the sample of families surveyed. This means that when a high-income family is averaged with a low-income family the consumption pattern of the wealthier family receives a greater weight because of its larger expenditures than the consumption pattern of the low-income family. While in some uses such a weighting is desirable, the practical effect on the CPI is to make it less representative of average consumption behavior. Consumption goods that are income-elastic--that is, which assume larger proportions of total expenditures as income grows--receive a greater weight. Consumption items that are thought to fall in this category are housing, entertainment, and education. Conversely, necessities

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4/ A quick approximation of the distortion due to an out-of-date market basket can be gleaned from the comparisons of the fixed-weight and chain versions of the Personal Consumption Expenditure indexes discussed later in this study.

5/ Steven D. Braithwait, "The Substitution Bias of the Laspeyres Price Index: An Analysis Using Estimated Cost-of-Living Indexes," American Economic Review (March 1980), pp. 64-77.

such as food are underweighted. An alternative method would be to calculate the budget share of each item by family and then aggregate or average these shares using equal population weights. This would correct the overweighting of luxury goods and underweighting of necessities.

Tax Treatment

The CPI includes sales and excise taxes in its market basket, and, to the extent that they are passed on by producers, the CPI will also pick up payroll taxes and other indirect business taxes. Income taxes, however, do not enter directly into the CPI. Even though there is no reason to think that one type of tax affects the standard of living any differently than another (provided it cannot be evaded) the CPI will rise more or less immediately in response to some kinds of taxes, but not apparently to an income tax. 6/ This is a characteristic shared by other price indexes as well, and stems from their relationship to the expenditure-based COL concept.

Along with the inconsistency that this treatment of taxes lends to a COL measure, it has another drawback. Because the CPI is a widely watched economic barometer, it may tend to bias legislators against tax increases that directly affect the CPI as opposed to income tax increases that do not. This bias could exist in the absence of any evidence that one tax affects the standard of living any differently than another. It may also obscure from consideration the fact that one type of tax (a consumption tax) will have different allocative effects over time than an income tax. In other words, the asymmetric treatment of taxes in the CPI may strongly influence the choice of tax policy to the detriment of efficiency and other considerations, such as growth.

The Treatment of Nonmarket Goods

The benefits of cleaner air, cleaner water, and better worker safety and health require resources for their production and

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6/ This insensitivity to income taxes presumes that increases in income taxes are not passed on by workers to the prices of the goods they produce--that is, that workers bargain with employers over pretax earnings instead of take-home earnings. This seems to be borne out in the U.S. experience to date, although it does not appear to be true in, for example, Britain.

improve the standard of living. Yet these goods are not counted in the consumption basket of any statistical measure. But the higher product prices that result from the cost of producing these benefits push up the CPI as though the same quality of living had become more expensive. Again, this shortcoming is shared by other price indexes. The fact that considerable progress was made in the 1970s toward better air, water, and safety standards suggests that this may have been a source of upward bias in the CPI.

The Problem of Representativeness

The accuracy of the aggregate CPI in measuring changes in the cost of living for any particular person or group depends on the degree to which people's consumption habits are the same. For example, older people consume more medical services than others, and hence it has been argued that when these costs are rising rapidly--to the extent they are not covered by Medicare--the retirees' real cost of living is underestimated by the aggregate CPI. But it is also argued that homeownership cost is a relatively smaller portion of the budgets of the elderly, so that they have benefited from the overweighting of this fast-rising item in the CPI.

Examination of individual's budgets reveals statistically significant differences when persons are grouped by age, income level, and certain other demographic variables, but it also reveals a large amount of variation within these groups after those factors are taken into account. 7/ Furthermore, the influences of age and income on consumption patterns do not appear to be stable over time. To determine whether these demographic groups actually experience a consistent and statistically significant difference in cost of living from that measured by the current CPI would require a study of survey-based samples of the items purchased and points of purchase of these demographic groups. Given that the majority of indexed federal programs are targeted at the elderly or poor,

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7/ R. Michael, "Variation Across Households in the Rate of Inflation," Journal of Money, Credit, and Banking (February 1979), pp. 32-46; and Hagemann, R.P., Inflation and Household Characteristics: An Analysis of Group Specific Price Indexes, U.S. Department of Labor, Bureau of Labor Statistics, Working Paper No. 110 (December 1980).

such demographic indexes would have ready application. With present information, however, it is guesswork as to whether such indexes would show a faster rate of change or whether any differences would be consistent ones.

Other CPI Issues

The CPI reflects changes in prices of imported goods such as automobiles, televisions, and oil. Price increases in these items can take place for reasons having nothing to do with the domestic economy. They may be relative price movements or changes in the terms of international trade that require an increased share of U.S. economic output to pay for them. 8/ Indexation exempts certain groups from sharing in this burden, an income transfer that may or may not be desired depending on the purposes of indexation. If it is not desired, the inability of the CPI to render a measure of only domestic price change constitutes a drawback of this index.

Finally, despite many improvements over the years, certain technical measurement problems continue in the CPI. One of these is the difficulty of distinguishing pure price change from price movements associated with change in the quality of the goods in the market basket. Although the BLS makes some effort to adjust for these changes, a number of criticisms remain. Another problem is that the samples used in collecting house price and rental rate information are not as representative as would be desired.

THE PRODUCER PRICE INDEXES (PPI)

There are three separate indexes of producer goods prices at different levels of processing--for crude materials, intermediate goods, and finished goods. (Simple aggregation of these into one index would result in double counting, as a price rise in a crude material is reflected in prices of goods using that material.) The indexes cover a limited universe of goods, principally in the mining, manufacturing, and agricultural sectors. They do not include construction, transportation, and other services. Prices are collected from a variety of sources including questionnaires,

8/ Higher import prices could also result from a fall in the exchange value of the dollar which, under a flexible exchange rate system, is what would occur in the presence of the generalized domestic inflation described in Chapter III.

industry publications, and government agencies. Normally, these are prices quoted by sellers rather than buyers, and while an effort is made to obtain actual transaction prices, in practice this cannot always be done. Similarly, the collected data reflect a mixture of order prices for future shipments and the shipping prices of finished output. For goods with a considerable time lag between order and delivery, such inconsistency can create ambiguity about the timing of price changes.

Weighting of price changes within the three PPIs is based on the value of shipments of each category of goods in 1972. Thus the PPIs are Laspeyres indexes with 1972 weights, although, like the CPI, they have a reference base of 1967.

The PPI measures would not be very appropriate for general indexation purposes because of the limited universe they cover and because they measure the prices only of certain inputs into the creation of consumer goods and services. The prices of this limited universe of goods may rise at a different rate from other sectors of the economy, thus yielding an inaccurate measure of changes in the cost of living. Similarly, the costs of some inputs may change at different rates than the prices of final goods and services because the particular inputs are a small portion of total value added--for example, the value of the wheat contained in a loaf of bread. The PPI indexes may, however, be used for specialized purposes such as escalating purchase contracts and deflating inventory measures. As they tend to be rather sensitive to supply and demand changes, one of their major uses is as an analytical tool for observing in detail the effects of changing economic conditions. Another major use is for deflating portions of the national income accounts.

THE GNP INDEXES

The gross national product is the total value of goods and services produced in the economy. It includes consumption, investment, and government services, with exports added and imports subtracted. It is the broadest concept for which a price measure exists. GNP price measures are available in all three index forms--Laspeyres, Paasche, and chain-weighted. The Paasche form of the GNP index is created by detailed deflation (adjustment of nominal value to remove the effect of price change) of each item category in the national output. When these items are reaggregated, the resulting series is called constant-dollar or real GNP. When nominal GNP is divided by real GNP, the result is an implicit

price deflator. As mentioned before, one characteristic of such a measure is that it does not measure pure price change from period to period but is contaminated by changes in the quantity weights. It has a tendency because of these shifts in weights to underestimate the true change.

In addition, a fixed-weight version of the GNP price index is produced using 1972 expenditure weights. These are drawn not from a statistical sample as in the CPI, but from the aggregate data collected for the national income accounts. The GNP index is also produced in a chain-weighted version that uses weights from the previous period's expenditure pattern.

The usefulness of the three GNP price measures stems from several features. First, they are indicators of domestic rather than foreign prices. This is a consequence of the GNP accounting framework that adds export prices but subtracts import prices. Thus indexes are obtained with the direct effect of foreign price changes removed. While it is true that U.S. consumption includes imported goods, and also true that someone else consumes U.S. exports, attempts to index to import price changes will, as discussed earlier, lead to successive rounds of price increases (see Chapter III). The advantage of using a GNP index to adjust federal benefits is that it would require beneficiaries to share in the burden of adjusting to foreign price changes.

Second, the GNP measures are useful because they are so broad, including all sectors of the economy, and thus give a better measure of the value of the dollar in all its uses.

Third, the existence of three different GNP index forms provides better insight into problems of determining the true change in the cost of living. Comparison of the chain-weighted form with the fixed-weight form reveals the differences created by substitution in the market basket.

Fourth, the GNP measures can be decomposed into various subindexes that may be more appropriate for certain tasks of indexation. Some of the more important of these are discussed below.

Gross Domestic Business Product (GDBP)

This subset of GNP covers the private business portion of the economy and accounts for about 85 percent of GNP. It is created

by subtracting government purchases from GNP and by making minor adjustments to the consumption and net export sectors (to remove household and nonprofit activity from the former, and to remove payments to U.S.-owned factors of production abroad from the latter).

GDBP indexes have some of the advantages of the GNP indexes, notably that import prices are removed. They are also available in the three index forms. Their advantage over the GNP indexes is that they concentrate on the private sector, reflecting the activity of market forces.

Private Nonfarm Business (PNB)

This measure is a subset of GDBP, created by excluding the output of the farm sector. Economic activity in the farm sector is sometimes rather volatile and subject to random forces such as the weather, pests, and diseases. Furthermore, government agricultural policy may also strongly influence the level of activity as well as prices in this sector. By excluding this sector, one obtains a measure that is to a much greater extent reflective of market forces on private business activity. Use of such a measure would, for example, make it easier to conduct farm policy without adverse effects on cost-of-living escalators. If such a price measure were used in computing the parity concept underlying crop support programs, it would also reduce the feedback of boosts in crop support levels on parity. Like the other GNP-based indexes mentioned above, the PNB indexes exclude import prices. And, like the other measures, the trade-off for this advantage is that the measure is not strictly confined to consumption goods. 9/

Personal Consumption Expenditure (PCE)

The coverage of this subset of GNP is the closest of all the GNP subsets to that of the CPI. It includes the economywide purchase of goods and services for consumption by individuals. In addition, it contains the smaller components of the operating expenses of nonprofit institutions, and some of the value of goods

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9/ Since the benchmark revision of December 1980, the chain and fixed-weight versions of this price measure are available only on an annual basis, in contrast to the quarterly publication of other GNP-based indexes.

and services received in kind by individuals. Thus, while the concept of the PCE indexes is quite similar to that of the CPI, both the scope and population coverage are somewhat broader. PCE accounts for nearly two-thirds of total GNP.

Although the PCE indexes are very similar to the CPI in concept, there are both major and minor differences in coverage, weighting, and concepts of measurement. 10/ The most important difference is in the treatment of housing. Homeownership in the PCE indexes is treated in a manner similar to that of the experimental X-1 CPI measure, as a rental equivalence. In the national income accounts, home purchase is treated as an investment purchase, not as consumption. The flow of shelter services consumed by those who own their houses is measured by the proxy of rental rates. This practice treats homeowners as investors who have rented out the use of the home to themselves. It gives housing a significantly lower weight in the PCE, which, when combined with the slower rate of increase of rental rates as opposed to house prices, explains the larger part of the difference between the recent behavior of the CPI and of the PCE measure.

Another item treated differently in the PCE indexes is the purchase of used cars. Since the national income accounts are concerned with the measurement of currently produced goods and services used for consumption, they endeavor to measure only the current value added in a used car transaction--such as the markup by the used car dealer--and the net value of used cars sold from nonconsumption sectors of the economy to the consumption sector. In contrast, the CPI treatment is essentially that of a gross concept, resulting in a weight in the CPI for this often volatile price series that is very large (equal to about three-fourths of the relative importance of new cars).

10/ Published documentation on the construction of PCE indexes is somewhat limited. A standard reference is Readings in Concepts and Methods of National Income Statistics, U.S. Department of Commerce. For a comparison with the CPI, see "Reconciliation of Quarterly Changes in Measures of Prices Paid by Consumers" Survey of Current Business (March 1978) and J.E. Triplett and S.M. Merchant, "The CPI and the PCE Deflator: An Econometric Analysis of Two Price Measures," Annals of Economic and Social Measurement (February 3, 1973).

The PCE deflator has tended to be more stable than the CPI and to rise at a less rapid rate. These differences can be seen in Table 3.

Like the CPI, the PCE indexes include the cost of imported goods. These enter directly as consumption of finished imported goods, indirectly as consumption of goods fabricated with imported inputs, and more indirectly as these affect the prices of competing domestic goods.

Like the other GNP measures, the PCE is available as a deflator and as a chain index as well as in a fixed-weight form. As shown in Table 3, the chain and deflator forms have risen less than the fixed-weight version because of the difference in market baskets. The effect of substitution can be seen most clearly by comparing the change in the PCE fixed-weight index with the change in the PCE chain index for a given year.

Like other GNP account measures, the PCE is published quarterly. A preliminary figure is reported one month after the end of the quarter and may be revised in each of the two succeeding months as more data become available. In addition, the accounts for the three preceding years are revised in July of each year. Such revisions will affect the index levels in those previous periods as well as the current index level. If a GNP component price measure is to be used for indexation, then the escalation formula should take into account the revision process, so that the current level of indexed payments remains consistent with the current price index level.

The Department of Commerce recently has begun publishing a PCE deflator on a monthly basis. At present the fixed-weight and chain index forms are not available on a monthly basis. Monthly indexes are not, however, a necessity for escalation purposes unless very recent changes must be taken into account or unless it is necessary to index over very short intervals.

WAGE INDEXES

As mentioned in Chapter III, the rationale for using a wage index is based on two related concerns. The first concern is that of fairness--of avoiding rates of increase in benefit programs that outstrip the rate of wage increase of the working population. It is their taxes that fund these payments, and when benefits increase

TABLE 3. COMPARISON OF PERCENT CHANGES IN ALTERNATIVE PRICE INDEXES

	CPI-U	CPI X-1	PPI Finished Goods	GNP Deflator	GDBP Deflator	PNB Deflator	PCE Deflator	PCE Fixed Weight	PCE Chain
1971	3.5	3.7	2.9	4.7	4.0	3.7	3.9	3.7	3.8
1972	3.4	3.3	3.5	4.3	3.5	3.0	3.6	3.6	3.7
1973	8.3	8.0	11.6	7.0	7.0	5.3	7.3	7.8	7.6
1974	12.2	11.1	18.7	10.1	10.5	11.8	11.0	11.3	11.0
1975	7.4	6.8	7.0	7.7	7.5	7.5	6.1	6.5	6.4
1976	5.1	5.2	3.2	4.7	4.3	4.9	4.9	4.9	4.9
1977	6.7	6.3	7.1	6.1	5.9	5.7	5.9	6.4	6.3
1978	9.0	7.8	8.8	8.5	8.7	8.3	7.8	8.2	8.0
1979	12.7	10.6	12.7	8.1	8.2	8.3	9.5	10.3	9.9
1980	12.5	10.9	12.3	9.8	9.9	10.1	10.0	10.7	10.4
70-80 1/	116.6	103.0	130.2	97.6	95.3	93.3	96.5	102.3	99.8

NOTE: Percent changes, annual rates, fourth quarter to fourth quarter.

1/ Percent change over ten-year period, 1970:4 to 1980:4.

faster than wages this represents a redistribution of income. Second, the wage measure is more closely keyed than other measures to the ability of society to shoulder the burden of benefit payments. A relative slowdown in wage growth either because of reduced productivity growth or a shift in the cost of imports relative to the value of exports is a signal that the country's consumable economic output is growing less rapidly. Indexing to a wage measure ties changes in benefit levels to changes in the size of the economic pie. Receivers of benefits will share in the burden of economic setbacks but will also benefit from productivity growth.

A variety of wage measures could be used for indexing. These are briefly described below, and their movements are compared in Table 4.

Average Hourly Earnings

This is a monthly series giving the dollar average of wages and salaries of production and nonsupervisory workers in the private nonfarm economy. It does not include nonwage benefits (fringes), nor does it adjust for overtime pay. Another drawback is that shifts in the relative numbers employed in different industries or occupations can cause movements in the aggregate measure without a change in actual hourly wage rates.

Hourly Earnings Index

This is a monthly index covering the same universe as the average hourly earnings series but adjusted for the effects of overtime (in manufacturing only) and of relative shifts in employment among high-wage and low-wage industries. It is based on a recomputation of the average hourly earnings data using fixed weights for aggregating industries. Because of the fixed-weight format, however, if wages rise more rapidly in industries that are expanding their employment fastest, the index will tend to understate the actual rise in wage rates.

Compensation Per Hour

This index is published quarterly, using in part data collected for the national income accounts. It covers all workers in the civilian economy. Besides wages and salaries it includes

TABLE 4. COMPARISON OF PERCENT CHANGES IN ALTERNATIVE WAGE INDEXES

	Average Hourly Earnings	Average Hourly Earnings Index	Compensation Per Hour	Spendable Weekly Earnings	Employment Cost Index
1971	6.9	NA	5.7	7.9	NA
1972	7.7	NA	7.4	8.3	NA
1973	6.6	6.4	8.1	4.8	NA
1974	8.3	9.1	11.0	5.7	NA
1975	6.2	7.5	7.7	10.3	NA
1976	7.7	7.3	8.5	5.2	7.2
1977	7.7	7.5	7.4	10.8	7.1
1978	9.0	8.4	9.1	5.3	7.7
1979	7.8	8.1	9.7	7.2	8.7
1980	8.8	9.7	10.0	6.9	9.0
70-80 1/	109.6	NA	125.0	100.8	NA

NOTE: Percent changes, annual rates, fourth quarter to fourth quarter.

1/ Percent change over ten-year period, 1970:4 to 1980:4.

employer contributions for nonwage benefits, including social insurance and private benefit plans. It does not, however, exclude the effects of overtime, or of relative shifts in employment among occupations or industries.

Employment Cost Index

Currently under development, this new measure will combine some of the more desirable features of the wage measures already described. All civilian industries will be surveyed monthly. The index will cover all levels of workers, excluding only the self-employed, proprietors, unpaid family workers, and owner-managers. It will measure the entire compensation package, wages as well as fringe benefits. It will exclude the effects of overtime (in manufacturing), and of relative shifts in employment among industries and occupations. To adjust for employment shifts, a fixed weighting technique is employed as in the Hourly Earnings Index; it bears a resemblance to the techniques used for measuring consumer prices in the CPI.

Currently, this measure is available only at three-month intervals, and the data refer to the private nonfarm economy.

Spendable Earnings

This monthly series is based on an arithmetic average of earnings in all production and nonsupervisory jobs, including part-time, in the private nonfarm economy. It reflects changes in the length of the average workweek. The interesting feature of this measure is that estimated employee payments for Social Security and federal income taxes are subtracted from gross average weekly earnings. This is done for two categories, a single worker or a married worker with three dependents.

Indexation using this measure would tie benefit levels to the after-tax income of the working population. For example, an increase in income or payroll taxes would lower spendable earnings and reduce indexed benefits. Similarly, an attempt to stimulate the economy through a tax cut would raise spendable earnings and increase indexed benefits.

POSSIBILITIES FOR NEW MEASURES

Alternatives to the existing statistical measures can be classified in two groups: first, modifications and improvements of existing measures, and second, development of CPIs keyed to the consumption patterns of specific demographic groups.

Modifications and Improvements

Three of the shortcomings of the CPI discussed earlier--the homeownership problem, the out-of-date weights, and the aggregation by expenditure--could be substantially remedied. Indeed, considerable effort is under way at the Bureau of Labor Statistics to develop satisfactory solutions to at least the first two of these problems. The modifications would have a significant effect on the CPI, very likely slowing its measured rate of increase, at least if the inflationary conditions of the 1970s continue to some degree into the 1980s. The difficulties of introducing such changes are political and administrative. Users of the index will be very wary of changes that will push the measured rate of change in a predictable direction. Consensus may be difficult to achieve among the principal users, who include organized labor. Administratively, considerable advance warning would be needed so that users of the CPI could make changes in the way it is treated in legal contracts.

Demographic-Specific CPIs

There have been repeated calls for a CPI for the elderly and retirees, and a CPI for the poor, in the belief that prices for these groups are rising faster than those for the rest of the population. If this is true, then indexation to the current CPI may not fully compensate for the rise in the cost of living. To construct additional CPIs of the quality of the existing CPI would involve an investment similar to that undertaken for the recent revision of the CPI-W and the creation of the CPI-U. In this case two considerations should be kept in mind. Only a small percentage of the variation in the cost of living among individuals can be ascribed to differences in age and income level. Furthermore, while the differences accounted for by such factors are statistically significant, their size is not stable over time. This raises the possibility that a demographic-specific CPI might be higher than the overall CPI in one period but lower in another

period. If that were to occur, enthusiasm for such special CPIs might wane. Another, more practical consideration is that the construction of one or two more CPIs might stimulate additional groups to demand other CPIs.

CONCLUSION

The suitability of a given index measure depends on the goals of the indexed provision of a particular program. The most desirable index for retiree benefits may not be suitable for farm support programs. For many indexed programs there appears to be a need for a general consumption index. The currently used CPI appears to have been responsible for significant overindexation of federal expenditures and thus constitutes a liability in its continued use in federal programs.

Because the CPI has distorted the rate of change in consumer prices in recent years, the expenditures linked to that index are now higher than if an alternative measure had been used. It seems desirable to improve the CPI if it is to continue its role as the principal cost-of-living measure. In the event that it may take several years to implement these improvements, an alternative measure such as the PCE chain index would offer significant advantages in the interim.

In weighing alternative index choices, one of the most important considerations, in addition to conceptual suitability, is the projected cost. Which index measures will rise the fastest or slowest? The historical evidence is presented in Table 3. There may be a temptation to use these data for simple extrapolation. In some cases this may be fairly reliable. For example, a fixed-weight index will probably rise slightly faster than the same index in deflator form, and a chain index will follow a course between the two. But extrapolation may be unreliable in other cases. For example, will the official CPI continue to outstrip the X-1 experimental measure? This is extremely difficult to project. Future differences between the two indexes will be highly sensitive to two influences--mortgage rates and the ratio of rent increases to house price increases. Falling mortgage rates will tend to lower the official CPI relative to the CPI X-1. Increases in house prices that are smaller than those of rental rates will also depress the official CPI relative to the experimental measure. The difficulty in forecasting the relative behavior of the two indexes lies in the possibility that these two forces may work

in opposite directions. At present, house prices are rising faster than rents, but it is rather doubtful that this can continue indefinitely. If inflation subsides, even gradually, mortgage rates should fall. The outcome will depend on the exact magnitudes of the offsetting effects. While it is possible that the current relationship will continue for some time, this is less likely if inflation subsides and less likely in the longer run as demographic pressure on housing demand subsides.

In relation to other measures, the CPI X-1 is likely to behave very similarly to the PCE fixed-weight index because of the features they share in common. The GNP, GDBP, and PNB indexes will tend to rise less rapidly than other measures if import prices are rising faster than domestic prices, and more rapidly if the reverse occurs. Wage indexes should, over the long run, rise faster than price indexes if productivity resumes growing.

CHAPTER VI. INDEXATION CHOICES FOR THE FOOD STAMP PROGRAM

The Food Stamp Program is effectively indexed in three of its parameters:

- The level of the standard allotment of food stamps is indexed to the prices of the Thrifty Food Plan;
- The eligibility criterion for food stamps is determined by the OMB-defined poverty level, which is adjusted by year-to-year changes in the CPI; and
- The applicant's income is adjusted--for purposes of determining eligibility and benefits--by a standard deduction that is indexed to changes in the CPI for all items excluding food, and by itemized deductions the limit on which is tied to a specialized index.

Use is made of two types of indexes: first, specialized indexes such as the Thrifty Food Plan and subindexes for adjusting the value of expenditures on particular types of consumption; and second, a general consumption index--in this case the CPI--that is used to adjust the poverty level. The issues presented by these two types of indexes differ considerably, as do the alternatives available for each type. 1/

1/ In addition to the formal or explicitly indexed parameters, the Food Stamp Program contains some features of implicit indexation. The earnings disregard of 20 percent is one example. If incomes of beneficiaries rise, the value of the disregarded portion rises in absolute level at the same rate. A second implicitly indexed parameter is the medical deduction available to all households with members age 60 or over, or receiving SSI benefits. In fiscal year 1982, out-of-pocket medical expenses exceeding $25 per month may be deducted from a household's income, both for eligibility and for benefit determination. Since medical expenses will increase over time because of price increases, the amount deducted will rise. But because the

SPECIALIZED INDEXES

Thrifty Food Plan

The index of primary interest in the Food Stamp Program is the Thrifty Food Plan, because of its use for adjusting the level of benefits. The Thrifty Food Plan is based on a nutritional study made by the National Academy of Sciences in 1975, which set out the requirements of a low-cost but nutritionally adequate diet. This model diet was then compared to a 1965-1966 survey by the U.S. Department of Agriculture of the food consumption patterns of a sample of the low-income population. From this comparison, adjustments were made to the model food basket to minimize the differences from actual consumption behavior, within certain cost limitations. The cost of the Thrifty Food Plan was then evaluated at 1975 market prices. Subsequent changes in the cost of this plan have been calculated by taking price changes for the individual items from detailed CPI data and combining them using the base-period expenditure weights from the Thrifty Food Plan.

This is a well-designed indexing procedure that has much to recommend it. It tracks the prices of the types of goods on which the benefits will be spent, and it weights the individual items in a manner reflecting the actual behavior of the target group of recipients. Its shortcomings are those of any Laspeyres or base-weighted index: since it uses a fixed market basket, it does not allow for substitution in response to relative price changes. The substitution problem may well be proportionally more important within a food index than in an overall consumption measure because of the relatively frequent and large swings in prices of beef, poultry, pork, and other protein sources as well as of fruits and vegetables. Among food shoppers substitution is widely practiced at nearly all income levels. In the case of food, however, these relative price changes are often transient and short-run, sometimes reverting to previous relative price patterns in less than a year. When large relative price changes occur within food groups, the Thrifty Food Plan is likely to exaggerate

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1/ (Continued)

$25 threshold level is not indexed, over time beneficiaries will be able to deduct a larger proportion of medical costs. This leads to an increase in benefit levels and a relaxing of eligibility standards for those who qualify.